

AUSTRAL HEPATICAE XVII.

PACHYSCHISTOCHILA SCHUST. ET ENGEL, GEN. NOV.

R. M. Schuster and John J. Engel

Cryptogamic Laboratory, Hadley, Massachusetts 01035, and Donald Richards Associate Curator of Bryology, Department of Botany, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, Illinois 60605

In Schuster (1971, pp. 614, 618) Schistochila subg. Pachyschistochila and Schistochila subg. Protoschistochila are described, taxa that share a salient group of features, i.e.: (1) a marked and almost universal tendency for leaves to become polystratose; (2) normally fasciculate rhizoids, arising from underleaf and ventral lobe bases; (3) colorless rhizoids, their apices frequently digitately lobed, with the lobes undergoing extensive septation both transversely and longitudinally; (4) gametophyte tissue as a whole--leaves, underleaves, stem, and paragynoecial structures--uniformly devoid of wall pigments; (5) some cells in leaves and/or underleaves undergoing secondary septation. (These fields of very small cells appear to constitute regenerations or a peculiar type of asexual reproduction.) We now believe, however, that the species sharing these features constitute a distinct and well-defined genus, as follows:

Pachyschistochila Schust. & Engel, gen. nov.

Plantae virides, succulentae, sine pigmentatione secundaria foliorum, caulicularum, rhizoideorumve; folia polystratosa, transverse inserta, sine lamellis, non incisa; marginibus integris subintegrisve, nunquam ciliatis; amphigastria mediocria, 2(3)-lobata, marginibus integris vel parce dentatis.

Type: Schistochila splachnophylla (Hook. f. & Tayl.) Steph. ≡ Pachyschistochila splachnophylla (Hook. f. & Tayl.) Schust. & Engel.

In contradistinction to Schistochila and Paraschistochila, two other genera of Schistochilaceae, this genus is exclusively south temperate-subantarctic in range, not one of its species penetrating the tropics or subtropics. Most taxa occur in alpine sites and/or in subantarctic moorland. The group "hangs together" in a phytogeographic sense. It is also unique in the entire Suborder Perssoniellineae in criteria 1-5 above. All other Schistochilaceae and Perssoniellaceae agree in: (1) the unistratose leaves, except rarely for small areas along the keel; (2) rhizoids scattered over ventral and sometimes also lower portions of lateral merophytes, arising from scattered cortical cells; (3) rhizoids magenta to vinaceous, their apices unbranched or dendritically branched (never digitate), the dendritic branching often anastomosing, the irregular branches not or tardily few-septate; (4) gametophyte, at least locally, with wall pigments;

pigmentation rarely confined only to rhizoids, but usually also present in some or many leaf cells; (5) asexual reproduction lacking.

We shortly anticipate revising the species of this genus, as regards the Australasian taxa; we already have revised those taxa found in South America (Schuster & Engel, 1977).

In order to avoid proposing new combinations for New World taxa in a forthcoming revision of Australasian taxa of Schistochilaceae, we have compiled here the taxa that fall in Pachyschistochila and give the new combinations and proper basionym citations. Occasion also is taken to transfer the extant described sections and subgenera from Schistochila to Pachyschistochila. Species 1-2, 4-6, 7b, 11, and 13 have been treated in Schuster & Engel (1977); in the near future the remaining taxa will be given a monographic treatment in which Sectio Pachyschistochila will get needed narrowing down. We do not wish at this time, however, to prejudice taxonomic conclusions without adequate discussion.

PACHYSCHISTOCHILA SUBG. PROTOSCHISTOCHILA (SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila Subg. Protoschistochila Schust., Bull. Natl. Sci. Mus. 14: 618. 1971.

1. PACHYSCHISTOCHILA EXALATA (HERZ.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila exalata Herz. Rev. Bryol. Lichénol. 29: 191. 1960. (Southern South America)

Pachyschistochila Subg. Pachyschistochila

PACHYSCHISTOCHILA SECT. REFLEXISTIPULAE (ENGEL & SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila Sect. Reflexistipulae Schust. & Engel, J. Hattori Bot. Lab. 42: 329. 1977.

2. PACHYSCHISTOCHILA REFLEXISTIPULA (ENGEL & SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila reflexistipula Engel & Schust. in Schuster & Engel, Phytologia 30: 245. 1975. (Southern South America)

PACHYSCHISTOCHILA SECT. VIRESCENTES (SCHUST. & ENGEL) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila Sect. Virescentes Schust. & Engel, J. Hattori Bot. Lab. 42: 344. 1977.

3. PACHYSCHISTOCHILA VIRESCENS (SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila virescens Schust. in Schuster & Engel, Phytologia 30: 248. 1975. (New Zealand)

Pachyschistochila Sect. Pachyschistochila

4. PACHYSCHISTOCHILA SPLACHNOPHYLLA (HOOK. F. & TAYL.) SCHUST. & ENGEL, COMB. NOV. Basionym: Jungermannia splachnophylla Hook. f. & Tayl., London J. Bot. 3: 455. 1844. (Southern South America)

5. PACHYSCHISTOCHILA SUBIMMERSA (ENGEL & SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila subimmersa Engel & Schust. in Schuster & Engel, *Phytologia* 30: 247. 1975. (Southern South America)
6. PACHYSCHISTOCHILA PACHYPHYLLA (LEHM.) SCHUST. & ENGEL, COMB. NOV. Basionym: Jungermannia pachyphylla Lehm. Nov. Minus Cogn. *Stir. Pug.* 6: 61. 1834. (Tristan da Cunha)
7. PACHYSCHISTOCHILA ALTISSIMA (HODGS.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila altissima Hodgs., *Trans. Roy. Soc. New Zealand, Bot.* 3: 85. 1965.
 - a. subsp. altissima (New Zealand)
 - b. SUBSP. POLYSTRATOSA (SCHUST. & ENGEL) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila altissima subsp. polystratosa Schust. & Engel, *Phytologia* 30: 241. 1975. (Southern South America)
8. PACHYSCHISTOCHILA COLENSOANA (STEPH.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila colensoana Steph., *Spec. Hep.* 4: 87. 1909. (New Zealand)
9. PACHYSCHISTOCHILA SUBHYALINA (SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila subhyalina Schust. in Schuster & Engel, *Phytologia* 30: 246. 1975. (New Zealand)
10. PACHYSCHISTOCHILA PARVISTIPULA (RODW.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila parvistipula Rodw., *Pap. & Proc. Roy. Soc. Tasmania* 1916: 47. 1917. (seors. 11 July 1916) (see also vol. 2 of *Tasmanian Bryophyta* p. 80. 1916). (Tasmania, New Zealand)
11. PACHYSCHISTOCHILA CARNOSA (MITT.) SCHUST. & ENGEL, COMB. NOV. Basionym: Gottschea carnosa Mitt., *J. Linn. Soc., Bot.* 15: 72. 1876. (Marion Is., South Georgia, Southern South America)

PACHYSCHISTOCHILA SECT. TRISPIRALES (SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila Sect. Trispirales Schust., *Bull. Natl. Sci. Mus.* 14: 618. 1971.

12. PACHYSCHISTOCHILA TRISPIRALES (SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila trispiralis Schust., *Bull. Natl. Sci. Mus.* 11: 28: f. 3. 1968. (New Zealand)

PACHYSCHISTOCHILA SECT. METASCHISTOCHILA (SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila Sect. Metaschistochila Schust., *Bull. Natl. Sci. Mus.* 14: 638. 1971.

13. PACHYSCHISTOCHILA LEUCOPHYLLA (LEHM.) SCHUST. & ENGEL, COMB. NOV. Basionym: Gottschea leucophylla Lehm. in G. L. & N., Syn. Hep. 17. 1844. (Southern South America)
14. PACHYSCHISTOCHILA PAPILLIFERA (SCHUST.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila papillifera Schust., Bull. Natl. Sci. Mus. 11: 27. 1968. (New Zealand)

References

- Schuster, R. M. 1971. Studies of antipodal Schistochilaceae and Scapaniaceae. Bull. Natl. Sci. Mus. 14: 609-60, figs. 1-22.
- Schuster, R. M. and J. Engel. 1977. Austral Hepaticae, V. The Schistochilaceae of South America. J. Hattori Bot. Lab. 42: 273-423, figs. 1-45.

Addendum: Through an oversight we did not include Schistochila cunninghamii in the above list. The following nomenclatural change is required:

PACHYSCHISTOCHILA CUNNINGHAMII (STEPH.) SCHUST. & ENGEL, COMB. NOV. Basionym: Schistochila cunninghamii Steph., Bih. K. Svenska Vetensk.-Akad. Handl. 26 (III, 17): 27. 1901. (Southern South America)